NLSS HD Media Decoder
(DC-400, DC-400-2)

User Manual for Independent Mode

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Preface

PURPOSE, SCOPE, AND AUDIENCE OF THIS DOCUMENT

This manual provides installation, configuration, and operation instructions for the NLSS HD Media Decoder in *Independent Mode*.

Note: This manual covers operations for two NLSS HD Media Decoders: the NLSS DC-400 and the DC-400-2. The DC-400-2 can accommodate two HD monitors.

Unless otherwise specified, all instructions apply to both the DC-400 and the DC-400-2

The NLSS HD Media Decoder is considered in Independent Mode when it is installed without NLSS Gateways or access control devices.

If the NLSS HD Media Decoder is installed with NLSS Gateways, as part of a complete NLSS security system, refer to the *NLSS Unified Security Suite: User Manual*, which is available on the **NLSS web site**.

This document also refers to the API of the NLSS HD Media Decoder. This API enables software developers to write third party applications that can communicate with the Decoder. For details, see the *NLSS DC-400 HD Decoder: API Reference Manual for Independent Mode*, which is also available on the **NLSS web site.**

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Chapter 1: Introduction

The NLSS HD Media Decoder is an open, true 1080p HD Decoder. The device can simultaneously decode up to four high definition (HD) or standard definition (SD) video streams, and display those streams in up to four panes. The NLSS DC 400-2 HD Media Decoder can display its views on two HD monitors or televisions.

The NLSS HD Media Decoder is primarily intended for viewing live security cameras, but it is also suitable for other video applications.

- In *Independent Mode*, the Decoder can display a variety of video sources. This manual covers this mode.
- in *NLSS Mode*, the Decoder functions as part of a complete NLSS security system. See the *NLSS Unified Security Suite: User Manual* from the NLSS web site.

The NLSS HD Media Decoder is configured and operated via NLSS Web Interface. The interface can be accessed from most browsers via a networked computer, or a mobile device with a Flash-enabled browser.

The Decoder can be operated (but not configured) using a remote control and an on-screen display on a monitor attached to the Decoder. The Decoder can be integrated with third party applications via the NLSS Decoder API.

1.1 KEY FEATURES

- Decodes live video streams from IP cameras, as well as other video encoders that use the RTSP, RTMP, and HTTP protocols.
- Decodes video streams from local files on the Decoder's hard drive, in support of digital signage.
- Decodes up to 4 simultaneous HD or SD streams using any of the following codecs:
  - Video codecs: H.264, MJPEG, MPEG4
  - Audio codecs: AAC, G.711, G.726
- The DC-400-2 supports Dual Monitor Mode.

  A decoded stream (at 1080p resolution) is output to two HD displays via an HDMI and a DVI-D cable.

  The DC-400 outputs a stream to a single HD display via an HDMI port.

  This output stream can include one to four simultaneous input streams in pane configurations of 1x1, 1x2, 2x2, 3x3, and 4x4. The Decoder maintains the aspect ratios of source streams.
- Supports the creation and display of custom channels, views, and sequences.

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- Can be integrated with third party systems via the NLSS HD Media Decoder API, as documented in the *NLSS DC-400 HD Media Decoder API Reference Manual for Independent Mode*.
- Comes with the NLSS Discovery Utility, which automatically discovers all NLSS devices on the same LAN.
- Includes a 250GB hard disk drive for local storage of content.
- Can be configured and operated from most browsers:
  - The following browsers are able to display the NLSS Web Interface: FireFox (3.0+), Internet Explorer (8.0+), Chrome, and Safari (3.0+).
  - The Flash 10.1 or later plug-in must be installed in your browser.

Note: The computer must be able to ping the Decoder to access it.

- Can be operated from a remote control. A remote control with batteries is included with the DC-400-2.

1.2 EXAMPLE USE CASES

1.2.1 Retail Store

Retail stores and banks, for example, can display live video from public view security cameras, as a way of informing patrons that they are being recorded for security purposes.

1.2.2 Medium Sized Business

Medium size businesses such as resorts, casinos, and commercial construction sites can use the NLSS HD Media Decoder to monitor numerous cameras and access doors throughout their properties.

1.2.3 Digital Signage

The NLSS HD Media Decoder can display local media files (such as an animated logo or commercial), as well as RTSP streams for video sources outside the Decoder itself.

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Chapter 2: Installation

2.1 PACKING LIST

- DC-400-2 Decoder
- Power supply; U.S. and EU power cords
- Remote Control and batteries
- Stand and VESA mount
- NLSS Discovery Utility (CD)
- *NLSS DC-400 HD Media Decoder: Quick Start Guide*

2.2 SYSTEM REQUIREMENTS

For details on cameras, displays, file types, and codecs supported by the current version of the NLSS HD Media Decoder, see the *Supported Device List*. To find the current list, search for *Supported Device List* in the **Support > Knowledge Base** page of the NLSS web site:

http://www.nlss.com/support-kbase.html

- **Network**: The NLSS HD Media Decoder requires a 100/1000 Mb Ethernet connection to a LAN.
- **Display**: The NLSS HD Media Decoder can be attached to any monitor or television that has DVI-D or HDMI inputs.
- **Cameras and Discovery Protocols**: To be auto-discovered by the NLSS HD Media Decoder, IP cameras must be on the same LAN subnet and adhere to one of the following discovery protocols:
  - Arecont
  - Axis
  - Bonjour Zero Config
  - Panasonic
  - Pelco
  - Sony
  - UPnP
- **Computer with Web Browser**: To access the web interface, a computer with a supported browser is required: FireFox (3.0 or above), Safari (3.0 or above), or Internet Explorer (8.0 or above).

  The computer must be able to ping the Decoder to access it.

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2.3 INSTALLATION

To install the NLSS HD Media Decoder in Independent Mode, complete the instructions the following order:

- **Install the Security Certificate**
- **Install Cameras**
- **Install NLSS HD Media Decoder**

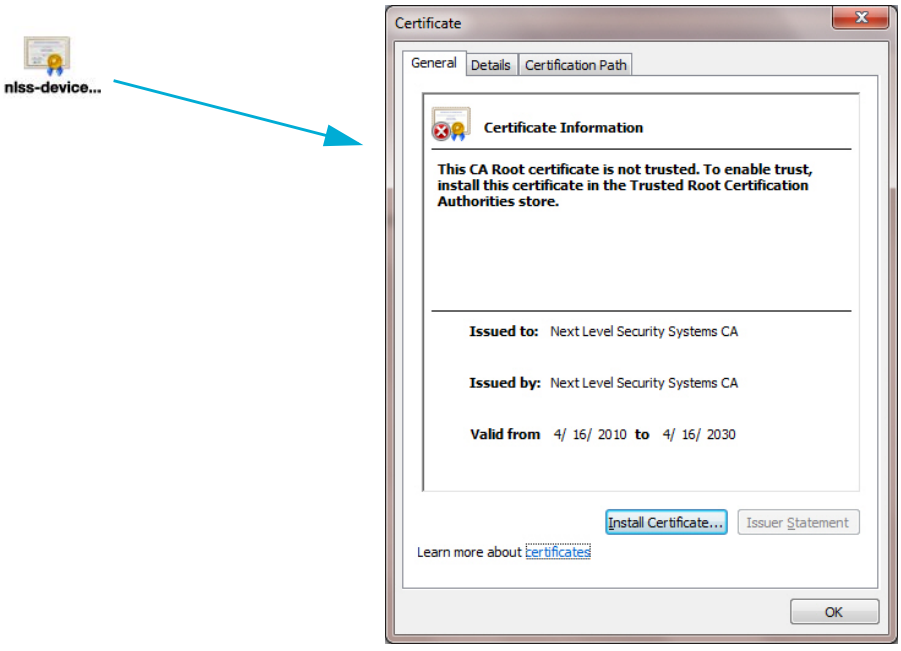
2.3.1 Install the Security Certificate

The NLSS HD Media Decoder uses the HTTPS protocol for security purposes. The NLSS CA certificate must be installed for your browser.

The following instructions only cover installation of the NLSS CA certificate for Internet Explorer (8.0 or above).

For other browsers, consult the browser's help for instructions on manually installing a CA certificate.

1. Open Internet Explorer.
2. Navigate to **www.nlss.com/support-download-cert.html**, to locate a link to a page where you can download NLSS CA certificates.
3. Click **Download NLSS Certificate**.
4. Save the certificate file to your desktop.
5. Double-click the certificate file to open the Certificate dialog.


nlss-device...
Certificate
General
Details
Certification Path
Certificate Information
This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.
Issued to: Next Level Security Systems CA
Issued by: Next Level Security Systems CA
Valid from 4/ 16/ 2010 to 4/ 16/ 2030
Install Certificate...
Issuer Statement
Learn more about certificates
OK

6. In the General tab of the Certificate dialog, select **Install Certificate**. The Certificate Import Wizard opens.
7. Click **Next** to display the Certificate Store dialog.

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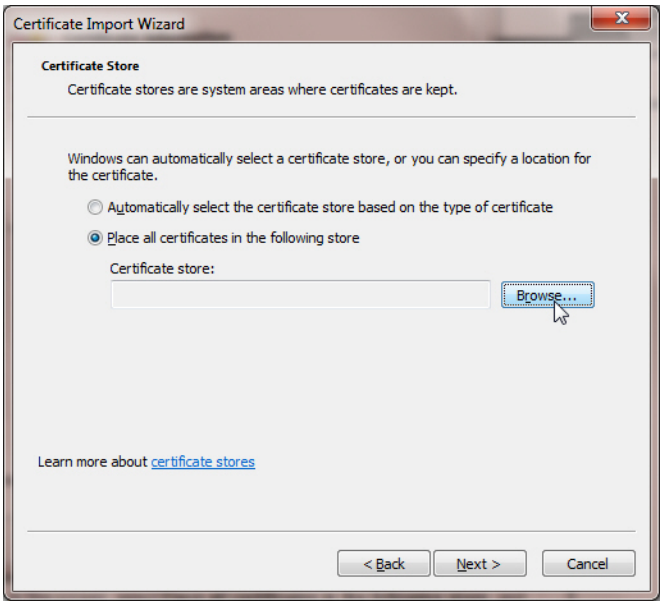
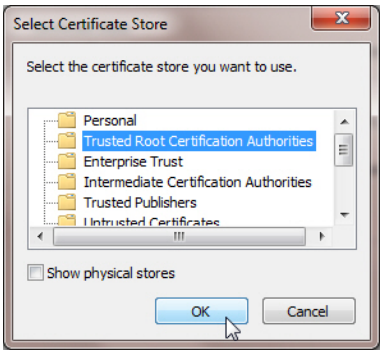
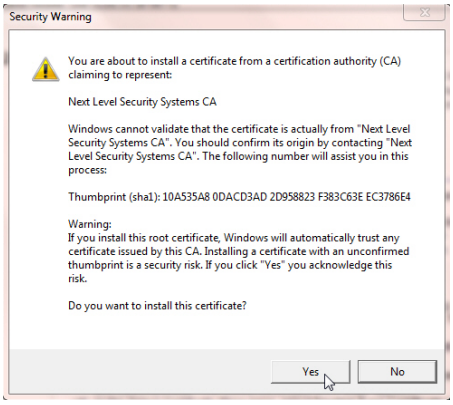
8. Select **Place all certificates in the following store**.


Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for the certificate.
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
Learn more about certificate stores
< Back
Next >
Cancel

9. Click **Browse** to display the Select Certificate Store dialog. A list of certificate stores is displayed.
10. Select **Trusted Root Certificate Authorities**.
11. Click **OK**. The list is closed.



12. In the Certificate Store dialog, click **Next**.
13. Click **Finish** to close the Wizard.
14. If a Security Warning page displayed, click **Yes** to complete the Certificate installation.


Security Warning
You are about to install a certificate from a certification authority (CA) claiming to represent:
Next Level Security Systems CA
Windows cannot validate that the certificate is actually from "Next Level Security Systems CA". You should confirm its origin by contacting "Next Level Security Systems CA". The following number will assist you in this process:
Thumbprint (sha1): 10A535A8 0DACD3AD 2D958823 F383C63E EC3786E4
Warning:
If you install this root certificate, Windows will automatically trust any certificate issued by this CA. Installing a certificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.
Do you want to install this certificate?
Yes
No

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2.3.2 Install Cameras

For ease of discovery, ensure your IP cameras are installed and powered on a LAN before installing the NLSS HD Media Decoder on the same LAN.

Note: For best results, use the same password for all cameras you wish the Decoder to discover. Camera passwords can be changed. See **Set Global User Names and Passwords** for more information.

2.3.3 Install NLSS HD Media Decoder

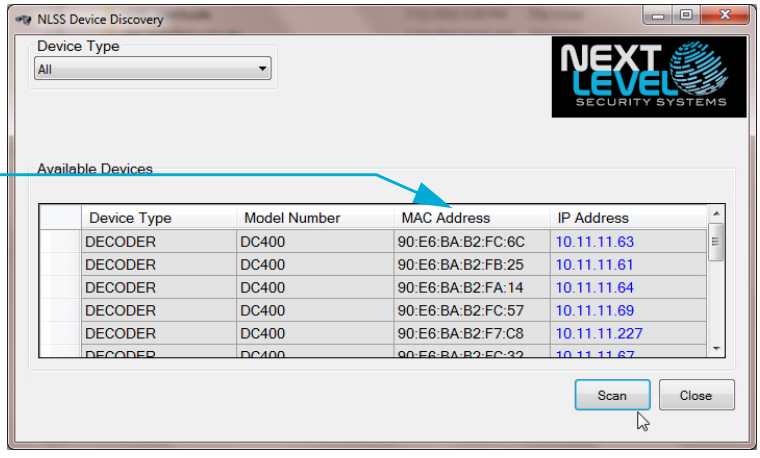
1. Using an HDMI or DVI-D cable, connect the NLSS HD Media Decoder to the HDMI or DVI-D port of a 1080p monitor or TV.
   – Use the other video port to connect a second monitor to the NLSS HD DC-400-2 Media Decoder.
2. Using an Ethernet cable, connect the NLSS HD Media Decoder to the network shared by your IP cameras.
3. Plug the power adapter into the NLSS HD Media Decoder and then into an AC outlet.
4. Turn on the Decoder from the power switch on the front of the device.
5. Insert the supplied NLSS Discovery Utility CD into the disc drive of a PC on the same network as the Decoder.

Important: The NLSS Discovery Utility requires and operating system of Windows XP or later, with Microsoft .NET 2.0 or above installed.

6. Copy the Utility file from the CD to the PC's hard drive.
7. Run the Utility. The Utility lists all the NLSS HD Media Decoders it discovers.
8. In the Utility screen, click **Scan** to find the NLSS HD Media Decoders on your network.

   The Utility scans your network and finds all physically attached Decoders. In the Utility list of discovered Decoders, note the MAC address of the target Decoder.

Locate your Decoder and note its MAC address



9. Enter the Decoder's MAC address in your browser:

   https://nlss-dc400-*macaddress*.local

   where *macaddress* is the MAC address of the target Decoder.

   For example, if the MAC address of the Decoder is 90:E6:BA:B2:F7:C8, then the following URL is entered, with the colons removed from the MAC address:

   https://nlss-dc400-90e6bab2f7c8.local

Note: The scan results of the NLSS Discovery Utility provides both the IP and MAC addresses of the Decoder. The IP address can be used to navigate to the Decoder, but some issues can occur:

- » If the NLSS CA certificate is not properly installed, a certificate error is displayed. If so, bypass the error and continue to the Decoder.
- » If the Decoder is installed on a network using DHCP, the IP address may change without warning. A bookmark to the Decoder using an IP address becomes invalid. A static IP address can be set instead of DHCP. Verify the IP address configuration with the Network Administrator.

  Since the Decoder's MAC address does not change, bookmarking the URL with the MAC address is the recommended method.

10. Accept requests to install plug-ins and other options, if any.
    - – Bypass certificate errors, if any.

Note: After the Decoder is installed, any computer with Internet access can access the Decoder via the web interface.

- » The computer must be able to *see* the Decoder. Ping the IP address of the Decoder from the computer to verify connectivity.
- » The computer must have a supported browser installed.

  A specific operating system is not required to use the web interface, only a supported browser.

11. The Decoder's NLSS Web Interface login screen is displayed.

12. Log into the NLSS HD Media Decoder using the default username and password:
    - – **User Name**: **superuser**
    - – **Pass**: **superuser**

13. After logging into the NLSS HD Media Decoder for the first time:
    a. Customize the default passwords for the Superuser and Operator. See **Configure and Manage Users** for instructions.
    b. Select **Decoder** in the Main Menu to display the Decoder page.
    c. Click the **Check Update** button to inquire if new firmware is available for the Decoder.

       If an update is available, update the firmware to the latest version. See **Update Firmware** for instructions.

    – Set the **Global Password** to match the global password that you set on all your cameras. See **Set Global User Names and Passwords** for instructions.
    – Reboot the Decoder and log in again.

After completing the installation, the Decoder can be configured and placed into operation:

- Discover all compatible cameras on your network.
- List these cameras in the Cameras Menu of the NLSS Web Interface.
- Create a separate Channel for each camera the Decoder can read, and create a 1x1 View for each Channel.
- Create one Channel containing the NLSS logo video, and display this Channel on the monitor attached to it.

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Chapter 3: Configuration and Operation Via a Browser

After installing the NLSS HD Decoder, use a supported web browser to configure and operate the device.

See **Key Features** for a list of supported browsers.

3.1 LOGGING IN

These log in instructions presume installation is complete.

Note: If this is the first time the NLSS HD Media Decoder is being access via the NLSS Web Interface, refer to **Installation** for additional steps to complete installation.

1. Open a supported browser and navigate to the target NLSS HD Media Decoder using the bookmark you created during installation.

   The Log In screen of NLSS Web Interface is displayed.

2. In the NLSS Web Interface login screen, access the NLSS HD Media Decoder using a configured user name and password. If the default user names and passwords have not been changed, use the following:

- **User Name**: **superuser**
- **Password**: **superuser**

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3.2 ABOUT THE NLSS WEB INTERFACE

In a supported browser, enter the URL of your Decoder. This URL can use either the MAC address or numerical IP address of your Decoder, as discussed in **Install NLSS HD Media Decoder**.

The login screen is displayed for the Decoder's NLSS Web Interface.

Note: If the login screen is not displayed, verify the correct MAC address or IP address is entered in the URL. See **Install NLSS HD Media Decoder** for instructions on running the NLSS Scan Utility to discover the Decoder's IP and MAC addresses.

If the URL is correct, ping the Decoder from the current computer to ensure network visibility.

After you log in, the Decoder's Main Menu is displayed with configuration and operations.

Note: The Decoder also can be operated from the remote control. See **Remote Control** for more information.

The Main Screen in the NLSS Web Interface provides a series of menus:

- **DECODER:** Provides hardware-related options for this NLSS HD Media Decoder. See **Configure the Decoder** for more information.
- **USER:** Lists the authorized users of this Decoder. The users can be managed from here. See **Configure and Manage Users** for instructions.
- **CAMERAS:** Lists all IP cameras discovered on your LAN, and allows you to configure them. See **Configure and Manage Cameras** for instructions.
- **STREAMS:** Lists all the non-camera video streams that have been configured on this Decoder. Streams can be added, removed, and edited from this screen. See **Configure and Manage Streams** for instructions.

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- **CHANNELS:** Lists all the channels configured for this Decoder. Channels can be added, removed, edited, and displayed from this screen. See **Configure and Display Channels** for instructions.
- **VIEWS:** Lists all the Views configured for this Decoder. Views can be added, removed, edited, and displayed from this screen. See **Configure and Display Views** for instructions.
- **SEQUENCES:** Lists all the Sequences configured for this Decoder. Sequences can be added, removed, edited, and displayed from this screen. See **Configure and Display Sequences** for instructions.
- **LOGOFF:** Ends your NLSS Web Interface session with this Decoder. The Decoder can be controlled with the remote control after a user has logged off. See **Remote Control** for instructions.

3.2.1 Search

With the exceptions of the Decoder and Logoff menus, all menus include a **Search** field.

In any menu with a search field, entering a text expression in the search field filters out all items in the list with names that do not contain your expression.

Example:
If the names of all cameras on the second floor of the North Tower include the unique term *NT_Floor2*, then searching for this term in the Cameras menu updates the list of cameras to show *only* those on the 2nd floor of the North Tower.

Search provides filtering to simplify navigation of a list in an extensive system containing hundreds of cameras, if each is configured according to a naming convention that identifies its location, type, etc.

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3.3 CONFIGURE THE DECODER

Each NLSS HD Media Decoder on the network can be configured via its own NLSS Web Interface session.

3.3.1 Decoder Parameters

When **Decoder** is selected in the Decoder Menu, options and a list of parameters are displayed. Some fields are read-only, while others can be edited.

If a parameter is changed, click **Save** to keep your changes.

Important: The Decoder *reboots* automatically, after accepting a confirmation warning.

- **Model:** This Decoder model.
- **Total Disk (GB):** The total space (used and free) of the hard drive of the selected Decoder.
- **Free Disk (GB):** The free disk space of the hard drive of this Decoder.
- **Firmware Version:** The version number of the currently installed firmware.
- **Display Width:** The width (in pixels) of the display for the output stream. The default value is 1920 pixels.
- **Display Height:** The height (in pixels) of the display for the output stream. The default value is 1080 pixels.
- **Decoder Name:** An editable name assigned this Decoder.

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- **Global UserName/Password:** If **use default** is checked, the Decoder connects to the IP cameras using the camera's factory default user name and password. See **Appendix A: Supported Camera Vendors** for more information.

  If the factory default user name or password has been changed on a camera, complete one of the following steps to allow the Decoder to connect to the camera:

  – Select a custom override for this specific camera. See **Customize the Camera's User Name and Password** for instructions.

  – Or configure all source cameras to use the same username and/or password. See **Set Global User Names and Passwords** for instructions.

- **Use DHCP:** Checked if DHCP is used to provide an IP address to the Decoder.

- **IP Address:** If DHCP is disabled, the Decoder's static Internet address is entered.

- **Subnet Mask:** If DHCP is disabled, the subnet mask is entered for selected Decoder.

- **Default IP Gateway:** If DHCP must be disabled, the IP address is entered for the n network gateway or router.

Note: This gateway is not an NLSS Gateway.

- **Primary DNS:** If DHCP must be disabled, this field sets the IP address for the network's DNS server.

- **Enable SSH:** When SSH is enabled, qualified technical support staff can remotely access and troubleshoot the Decoder using its SSH username and password.

  When finished, SSH can be disabled to prevent further access.

Note: Only superusers have permission to enable SSH.

For external access:

» User name: **nlss**

» Default password: **NextLS32!**

To change password, enter the SSH login from a command line and issue the Linux **passwd** command.

When SSH is disabled, no one can log into the Decoder via SSH, even if the correct SSH user name and password are entered.

- **Disable OSD:** If left unchecked, information on a video stream is displayed as an On-Screen Display overlay for a few seconds whenever a channel is switched. This field is unchecked by default.

  If checked, the On-Screen Display information is not displayed.

- **Disable Discovery:** If checked, the Decoder cannot discover any cameras.

Note: If the Decoder discovered cameras before **Disable Discovery** was checked, any or all of these cameras can be deleted via the Cameras Menu. Those cameras will *not* be re-discovered so long as Disable Discovery remains enabled.

- **Orientation:** From the drop-down menu, select an orientation for the monitor attached to the Decoder. The correct orientation is when *up* in the video stream corresponds to the physical top of your monitor in its intended position:

  – **Normal:** for monitors positioned horizontally, with no rotation.

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  - **Rotate Right:** for monitors rotated counterclockwise into a vertical position. When the monitor is rotated left, the video stream is rotated right to compensate.
  - **Rotate Left:** for monitors rotated clockwise into a vertical position. When the monitor is rotated right, the video stream is rotated left to compensate.
  - **Flip:** for monitors rotated 180-degrees.

- **Dual Monitor Mode**: This mode applies only to the DC-400-2.

  Two monitors can be attached to the Decoder, one to the HDMI port, and one to the DVI-D port. The arrangement of the display can be configured with two monitors attached to the Decoder. The drop-down menu provides five options.

  - **Single Monitor**: one monitor is attached to the Decoder, using either the HDMI or the DVI-D port.
  - **Dual Horizontal**: the current view is spread across two monitors that are installed in a side-by-side configuration.
  - **Dual Horizontal Swap**: exchanges the streams between side-by -side monitors.
  - **Dual Vertical**: the current view is spread across two monitors that are installed with one monitor above the other.
  - **Dual Vertical Swap**: exchanges the streams between monitors that are installed with one monitor above the other.

3.3.2 Decoder Actions

Besides the fields, the Decoder page also contains a series of options for operating and configuring the Decoder:

- **Reboot or Shut Down**
- **Factory Reset**
- **Download Logs**
- **Change the Name of the Decoder**
- **Update Firmware**
- **Set Global User Names and Passwords**
- **Customize Network Settings**
- **Backup Configurations**
- **Upload Configurations**
- **Restore Configurations**

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3.3.2.1 Reboot or Shut Down

In the event that the Decoder needs to be shut down or rebooted, those actions can be done from the Decoder page.

1. In the Main Menu, select the **Decoder** button to display the Decoder page.
2. In the Decoder page, select the **Reboot** button to reboot the selected Decoder;
   or
   select the **Shut Down** button to turn off the selected Decoder.
3. The Decoder reboots or shuts down after you confirm your intentions.

Note: If any parameters are changed in the Decoder page, a prompt is issued to immediately reboot the Decoder. A manual reboot is not needed.

3.3.2.2 Factory Reset

The NLSS HD Media Decoder can be restored to its factory state. The **Factory Reset** option deletes all files and configurations that the Decoder recorded since it left the factory.

Note: Firmware updates that have been applied since the Decoder was installed are kept.

Important: After doing a Factory Reset, the Decoder must be installed on the network as though is was being installed for the first time. See **Install NLSS HD Media Decoder** for instructions.

To restore a Decoder to its factory state:

1. Select **Decoder** in the Main Menu.
2. Click **Factory Reset** in the Decoder page.
3. Click **Yes** in the confirmation pop-up.

The Decoder is rebooted during the reset process.

3.3.2.3 Download Logs

When contacting NLSS or its authorized representatives for support, a technician might request the Decoder's logs to help with troubleshooting.

1. Select **Download Logs** from the Decoder page.
2. Save the Decoder's log file locally. The file can be sent to the support technician via e-mail, FTP, etc.

3.3.2.4 Change the Name of the Decoder

1. Enter a new name in the **Decoder Name** field.
2. Click **Save** to record your changes.
3. Click **Reboot** to restart the Decoder and apply the change.

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3.3.2.5 UPDATE FIRMWARE

Two methods are available to update the firmware for the NLSS HD Media Decoder:

- **Update Firmware Automatically**
- **Update Firmware Manually**

3.3.2.5.1 Update Firmware Automatically

1. Click **Decoder** in the Main Menu.
2. Click **Check Update** to update the Decoder's firmware automatically.

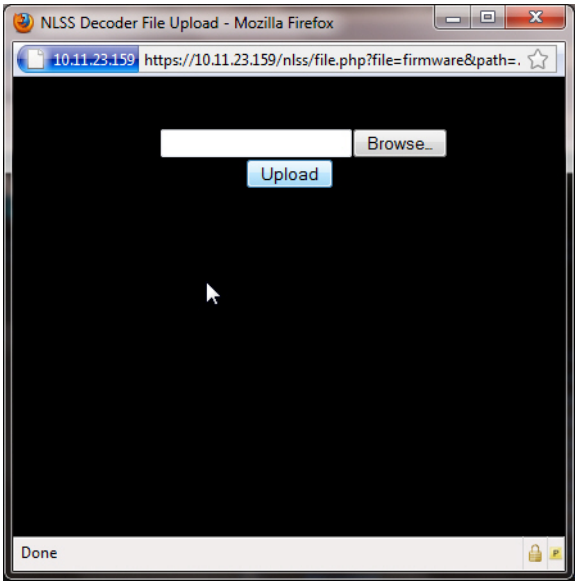
Note: If new firmware is not available, relative to the version currently installed on the Decoder, then Check Update exits without make changes.

If the firmware is available, it is installed after confirm the update is confirmed. The Decoder automatically reboots after the installation is complete. This process may take a few minutes.

3.3.2.5.2 Update Firmware Manually

Firmware updates also can be downloaded to a separate machine and manually applied to the Decoder.

1. Contact an NLSS authorized representative to get the latest Decoder firmware file.
2. Copy the Decoder firmware file to the hard drive of any computer sharing the same network as your Decoder.
3. In the Decoder, click **Upload Firmware** to display the File Upload dialog.
   a. Click **Browse** to locate the new firmware file on the computer's hard drive.
   b. Click **Upload** to copy the file to the Decoder.



4. Click **Update Firmware** to install the new firmware using the local firmware file just uploaded to the Decoder.
5. Click **Yes** in the confirmation pop-up.

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3.3.2.6 Set Global User Names and Passwords

The Decoder locates the IP cameras on the network the first time it runs. The Decoder can access these cameras' output only if the Decoder has the correct user names and passwords to access the cameras.

Note: If any camera uses unsupported drivers or codecs, then the Decoder can connect to these cameras by treating them as remote RTSP streams rather than cameras. See **Convert a Camera to a Stream** for instructions.

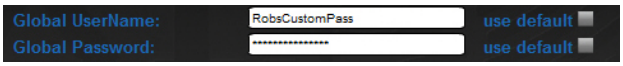
Each manufacturer generally uses the same user name and password for their entire line of cameras.

If the factory default user names and passwords have been changed on any cameras, then the Decoder cannot access their configurations or video streams, even though it detects the camera on the network.

The cameras can be configured to use custom user names and/or passwords that override global values. See **Customize the Camera's User Name and Password** for instructions.

Another option is to configure all cameras to use the same global user name and/or password.

1. Manually configure the camera hardware to use the same user name and password.
2. Log into the Decoder's NLSS Web Interface.
3. Click **Decoder** in the Main Menu to open the Decoder page.
4. De-select **Use Default** for the Global Username parameter.
5. Enter the new user name from Step 1 in the **Global Username** field.



Note: Depending on the installation, a custom global user name can be used with a factory default password, or vice versa.

6. Repeat Step 5 for the **Global Password** parameter.
7. Click **Save** to keep the changes.
8. **Reboot** the Decoder. See **Reboot or Shut Down** for instructions.

3.3.2.7 Customize Network Settings

The IP Address, Subnet Mask, Default Gateway, and Primary DNS are configured automatically when DHCP is enabled.

If DHCP is disabled, then these parameters must be manually configured. The network administrator can provide these parameters.

Note: The Default Gateway is the gateway for the network, not an NLSS Gateway.

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3.3.2.8 Backup Configurations

Configurations of cameras, streams, views, and other items can be backed up on the NLSS HD Media Decoder.

A backup is also needed before running a **Factory Reset**, **Upload Configurations**, or **Restore Configurations**.

1. Click **Decoder** to display the Decoder page.

2. Click **Backup Config**.

   A dialog asks what to do with the *config.zip* file containing the configurations.

3. Save the *config.zip* file to the desired location.

3.3.2.9 Upload Configurations

To upload configurations to the Decoder, upload the *config.zip* file created in **Backup Configurations**.

1. Click **Decoder** in the Main Menu.

2. Click **Upload Config**.
3. Locate the *config.zip* file using the file upload dialog.
4. Click **Upload** to load the configuration backup file to the Decoder.
5. Follow the **Restore Configurations** procedure to apply the configurations to this Decoder.

3.3.2.10 Restore Configurations

If a Decoder is replaced or a Factory Reset is run, configuration settings can be restored using the *config.zip* file created in **Backup Configurations**.

1. Click **Decoder** in the Main Menu.
2. Upload the *config.zip* file. See **Upload Configurations** to for instructions.
3. Click **Restore Config**.
4. Click **Yes** in the confirmation pop-up.

Important: Any configuration changes made since the config.zip file was created are overwritten.

5. Click **Yes** in the confirmation pop-up to allow the Decoder to reboot and apply the changes.

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3.4 CONFIGURE AND MANAGE USERS

By default, the NLSS HD Media Decoder includes one SuperUser, one Administrator, and one Operator account. Each user type has specific abilities:

- *SuperUser*: Has full control over the Decoder.
  - Default User Name: **superuser**
  - Default Password: **superuser**
- *Administrator*: Can run all operations except add, delete, and edit users.
  - Default User Name: **admin**
  - Default Password: **admin**
- *Operator*: Has read-only access to most menus. Can display any Channel, View, and Sequence that is already configured. Can only add, delete, or edit the numbers and names of existing channels, and the names of existing Views and Sequences.
  - Default User Name: **operator**
  - Default Password: **operator**

3.4.1 User Parameters

When you select a specific user from the User Menu, the following parameters appear in the User Info screen:

- **User Name:** The login name for this user.
- **User Type:** Must be SuperUser, Administrator, or Operator.
- **User Password:** (in Edit sub-screen only) The login password for this user.

3.4.2 User Actions

You must be logged in as a SuperUser to perform the following actions:

- **Add a New User**
- **Delete a User**
- **Edit User Parameters**

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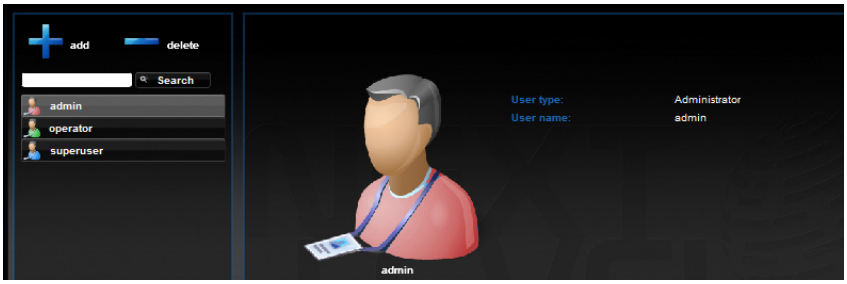
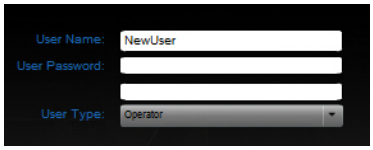
3.4.2.1 Add a New User

1. Click **User** in the Main Menu.
2. Click **+Add** above the list of users to display the Add/Edit User screen.

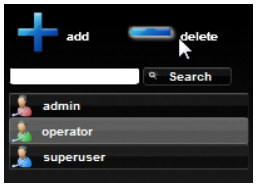


3. Enter a **User Name** in Add User fields.



4. Enter a **User Password** twice.
5. Select the **Type** of user from the drop-down menu.
6. Click **Save** to record your changes, or **Cancel** to abort the process.

3.4.2.2 Delete a User



1. Click **User** in the Main Menu.
2. Select a user in the Users list.
3. Click **-Delete** above the list.
4. Click **Yes** in the confirmation pop-up.

Note: Users are backed up in the *config.zip* file if one is accidently deleted.

3.4.2.3 Edit User Parameters

1. Click **User** in the Main Menu.
2. Select a user in the Users list.
3. Click **Edit** in the lower right corner of the Users page.
4. Edit the **User Parameters**.
5. Click **Save** to record your changes, or **Cancel** to abort.

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3.5 CONFIGURE AND MANAGE CAMERAS

Upon installation, the NLSS HD Media Decoder searches for IP cameras on the same network, and automatically configures the cameras it discovers.

Note: The Decoder does not change anything on the cameras. Rather, the cameras provide the Decoder with most of the parameters needed for configuration.

The Cameras Menu lists of all discovered cameras and their configurations. If the Decoder sees a camera, but cannot read its configuration or video stream, then the camera's name is preceded by **XX** in the Cameras Menu.

If a camera is on the network and functioning, and the Decoder cannot access it:

- The user names and/or passwords of the camera may have been changed from the default settings. Two options are available:
  - **Set Global User Names and Passwords**

    – or –
  - **Customize the Camera's User Name and Password**.
- The camera may use unknown drivers or unsupported codecs. Update the camera's driver and/or codec. Consult the camera vendor or documentation for more information.
- Set up the camera's video as a remote RTSP stream. See **Convert a Camera to a Stream** for instructions.

The instructions in this section assume that the NLSS HD Media Decoder discovered and fully configured at least one IP camera.

For details on cameras, RTSP streams, file types, and codecs supported by the current version of the NLSS HD Media Decoder, see the *Supported Device List*. To find the current list, search for *Supported Device List* in the **Support > Knowledge Base** page of the NLSS web site: **www.nlss.com/support-kbase.html**

3.5.1 Camera Parameters

When a camera is selected from the Cameras Menu, a series of parameters are displayed. Most of the parameters are provided by the camera and are read-only.

3.5.1.1 Parameters From the Camera

The camera provides following read-only values:

- **Driver Type:** The manufacturer of the camera's driver.
- **Firmware Version:** The version number of the driver used by the camera.
- **Model:** The model number of the camera.
- **IP Address:** The IP address of the camera.
- **Video Codec:** The video codec used by the camera. The following video codecs are supported: H.264, MJPEG, and MPEG4.

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- **Channel ID:** The output channel of the camera. This field is not the same as the *Channels* used by the Decoder. Some cameras can output simultaneously to more than one channel. This parameter indicates to which channel these parameters refer. If a camera has multiple channels, the camera is listed multiple times, one instance for each channel.
- **Width:** The pixel width of the video stream output from the camera.
- **Height:** The pixel height of the video stream output from the camera.
- **Frame Rate:** The frame rate of the video coming from the camera.
- **Bit Rate:** The bit rate of the video stream coming from the camera.
- **PTZ Cam:** Indicates if this camera is capable of pan, tilt, and zoom movements. NLSS Gateways provide access to PTZ controls, Decoders do not.
- **Audio Enabled:** If the selected camera is capable of audio, this parameter is set to **true**, and the Audio Codec and Audio Sample Rate parameters are displayed.
- **Audio Codec:** The codec used by the audio track in the stream from the camera.
- **Audio Sample Rate:** The sampling rate of the audio track in the stream from the camera. The Decoder supports the following audio codecs:
  - AAC
  - G711 A-law and U-law
  - G726 (40, 32, 24, and 16-kHz sampling rates)

If any of the read-only parameters are changed directly on a camera, click **Refresh Camera** to update these parameters in the NLSS Web Interface.

3.5.1.2 Parameters From the Decoder

The last six parameters are set by the Decoder and are editable.

- **Name:** An unique name given to the camera.
- **User Name:** The user name required by the camera to unlock it for streaming.
- **Password:** The password required by the camera to unlock it for streaming.
- **Use Multicast:** If enabled, this camera uses multicast. If disabled, it uses unicast.
- **Play Audio:** Enables or disables audio muting on the Decoder, regardless of audio capability of this camera.
- **Orientation:** Select an orientation for the camera from the drop-down list.

  Some cameras rotate the output signals. The Decoder cannot automatically determine the rotation of the source stream. This setting sets the Decoder to adjust the output for proper viewing.
  - **Normal:** The Decoder does not rotate the camera stream.
  - **Rotate Right:** The Decoder rotates the video stream 90-degrees clockwise.
  - **Rotate Left:** The Decoder rotates the video stream 90-degrees counter-clockwise.

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– **Flip:** The Decoder rotates the video stream 180-degrees.

3.5.2 Camera Actions

- **Change the Camera's Name**
- **Customize the Camera's User Name and Password**
- **Select Multicast or Unicast**
- **Enable / Disable Audio**
- **Refresh a Camera**
- **Delete a Camera**

3.5.2.1 Change the Camera's Name

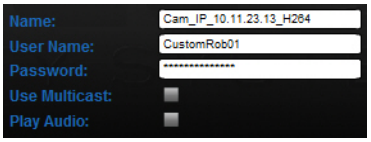
Camera naming is flexible.

1. Click **Cameras** in the Main Menu.
2. Select a camera.
3. Enter a new **Name**.
4. Select **Save** to record your changes, or **Cancel** to abort the changes.

3.5.2.2 Customize the Camera's User Name and Password

Changing a camera's automatically configured user name or password overrides the Global Username and Global Password in the Decoder page. See **Set Global User Names and Passwords** for more information.

1. Click **Cameras** in the Main Menu.
2. Select a camera to display its parameters.
3. Enter the **User Name** and **Password** required to unlock the camera.



4. Select **Save** to record your changes, or **Cancel** to abort the changes.

3.5.2.3 SELECT MULTICAST OR UNICAST

A multicast camera simultaneously sends the same stream to multiple users. A unicast camera sends a separate stream to each user.

1. Click **Cameras** in the Main Menu.
2. Select a camera.
3. Check **Use Multicast** to enable multicast from the camera.
   Uncheck the box to enable unicast.

Note: The camera must support multicast in order to use it.

4. Click **Save** to record your changes, or **Cancel** to abort the changes.

3.5.2.4 ENABLE / DISABLE AUDIO

The following instructions apply to audio-capable cameras only:

1. Click **Cameras** in the Main Menu.
2. Select a camera.
3. Check **Play Audio** to enable camera's audio in the Decoder.
   Uncheck the box to disable audio.
4. Click **Save** to record your changes, or **Cancel** to abort the changes.

3.5.2.5 REFRESH A CAMERA

If any parameters are changed locally on a camera, click **Refresh Camera** to update the information in the Cameras screen.

3.5.2.6 DELETE A CAMERA

If a camera is deleted from the Decoder list, then the channel and 1x1 View associated with the camera are deleted automatically.

Important: If that 1x1 View is used in a Sequence, then its place in the Sequence remains, with an error message. Manually remove the orphan View from the Sequence.

In 1x2 and 2x2 Views, the pane containing the deleted channel shows the NLSS logo animation instead. A different channel can be assigned to that pane.

To delete a camera:

1. Click the **Cameras** in the Main Menu.
2. Select a camera.

3. Click the **–Delete** button above the list of discovered cameras.
4. Click **Yes** in the confirmation pop-up.

After a camera has been deleted, the Decoder might re-discover it unless it is physically disconnected from the network.

The camera is also stored in the *config.zip* backup file.

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3.6 CONFIGURE AND MANAGE STREAMS

Video streams are listed in the Streams Menu. Stream types include local video files, remote RTSP, HTTP, RMTP, V4L, and EmbedHTTP.

When the Decoder is installed, a single file stream (the NLSS logo animation) is automatically configured and added to the Streams Menu. New streams can be added in the Streams menu. Existing streams can be edited and deleted from the Streams menu.

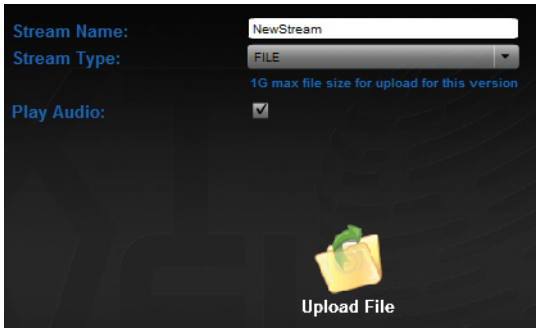
3.6.1 Stream Types

When adding or editing a selection, the parameters are dependent on the **Stream Type** that is selected from the drop-down list:

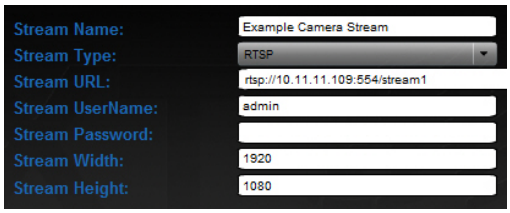
- **RTSP:** Select this option for remote streams using to Real-Time Streaming Protocol.
- **HTTP:** Select this option for remote streams using HTTP. The parameters for HTTP streams are the same as RTSP streams.
- **RTMP:** Select this option for remote streams that adhere to the Real-Time Media Protocol. The parameters for RTMP streams are the same as RTSP streams.
- **File:** Select this option for video files (such as logo animations) on the Decoder's internal hard drive.
- **V4L:** Select this option to use Video4Linux. No additional parameters are available for this stream type.
- **EMBEDHTTP:** Select this option to use an embedded video stream.

3.6.2 Stream Parameters

The parameters displayed in the Streams page depend on the type of stream selected. All fields are editable.



File Streams



RTSP Streams

3.6.2.0.1 Fields for all streams

- **Stream Name:** An unique name assigned to the stream.
- **Play Audio:** Check to enable the audio stream from the camera. This parameter is not available for V4L.

Note: Audio takes extra bandwidth. Disable this parameter to save bandwidth.

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3.6.2.0.2 Fields for File Streams

- **Upload File:** Navigate to a video file on a computer or network location, and upload it to the Decoder's hard drive.

3.6.2.0.3 Fields for Internet-based streams

- **Stream URL:** The URL of a local or remote source of the stream.

Note: The URL may require a port number, depending on the video stream source.

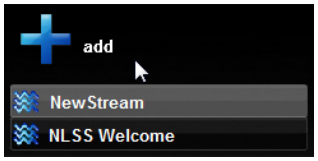
- **Stream UserName:** The user name for logging into the source of the stream.
- **Stream Password:** The password for logging into the source of the stream.
- **Stream Width:** The width (in pixels) of the source video stream.
- **Stream Height:** The height (in pixels) of the source video stream.
- **Use Multicast:** Enable for this camera to use multicast; disable to use unicast.

3.6.3 Stream Actions

- Add a New Stream
- Delete a Stream
- Edit a Stream
- Convert a Camera to a Stream

3.6.3.1 Add a New Stream

1. Click **Streams** in the Main Menu.
2. Click **+Add** above the stream list to display.



3. Enter the Stream Parameters.
4. Select **Save** to record your changes, or **Cancel** to abort.

3.6.3.2 Edit a Stream

1. Click **Streams** in the Main Menu.
2. Select a stream.
3. Edit the Stream Parameters.
4. Click **Save** to record your changes, or **Cancel** to abort.

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3.6.3.3 Convert a Camera to a Stream

If the Decoder cannot read a camera's parameters or video stream, then that camera can be configured as an RTSP stream.

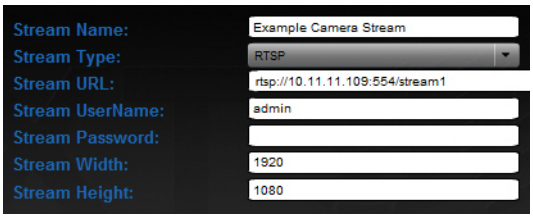
1. Click **Streams** in the Main Menu.
2. Click **+Add** above the stream list to display.
3. Enter the **Stream Parameters** for the camera. See **Stream Parameters** for more information.

   Note that the **Stream URL** requires an IP address, a port number and a string, in the following format:

   `rtsp://IPaddress:port/string`

   – where *IPaddress* is the IP address of the camera
   – *port* is the standard RTSP port of 554
   – *string* depends on the camera manufacturer (refer to **Supported Camera Vendors**).

   See **Appendix A: Supported Camera Vendors** for more information on RTSP syntax for specific cameras.

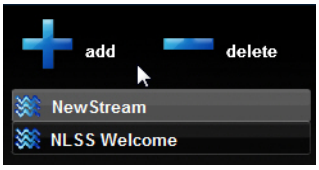


Example for a Pelco HD IP camera

4. Click **Save** to record your changes, or **Cancel** to abort.

3.6.3.4 Delete a Stream

1. Click **Streams** in the Main Menu.
2. Select a stream.
3. Click **— Delete** above the streams list.



4. Click **Yes** in the confirmation pop-up.

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3.7 CONFIGURE AND DISPLAY CHANNELS

When the NLSS HD Media Decoder was installed, channels were automatically created for the NLSS Welcome Animation and all IP cameras the Decoder discovered. Using the NLSS Web Interface from a browser on a local computer, you can add to and edit channel assignments. In fact, cameras and streams must be assigned a channel before they can be displayed on the monitor attached to the Decoder.

3.7.1 Channel Parameters

Four editable parameters are included with each channel.

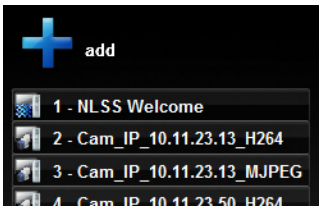
- **Channel Number:** A unique number assigned to the current channel. Do not repeat channel numbers in the system.
- **Channel Name:** An editable name for this channel.
- **Source Type:** A drop-down menu that marks the channel as either a **Camera** or a **Stream**.
- **Current Source:** A drop-down menu that associates this channel with a selected camera or stream.

3.7.2 Channel Actions

- **Add a New Channel**
- **Delete a Channel**
- **Edit a Channel**
- **Display a Channel on a Monitor**

3.7.2.1 ADD A NEW CHANNEL

1. Click **Channels** in the Main Menu.
2. Click **+Add** button above the Channels list.



3. Enter the **Channel Parameters** for the new channel.
4. Click **Save** to record your changes, or **Cancel** to abort.

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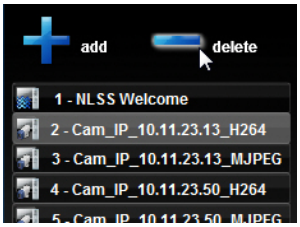
3.7.2.2 EDIT A CHANNEL

1. Click **Channels** in the Main Menu.
2. Select a channel.
3. Edit the **Channel Parameters**.
4. Select **Save** to record your changes, or **Cancel** to abort.

3.7.2.3 DELETE A CHANNEL

1. Click **Channels** in the Main Menu.
2. Select a channel.



3. Click **— Delete** above the channels list.
4. Click **Yes** in the confirmation pop-up.

3.7.2.4 DISPLAY A CHANNEL ON A MONITOR

1. Click **Channels** in the Main Menu.
2. Select a channel.

3. Click **Set Active** at the bottom of the screen to display the camera or stream associated with the channel.

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3.8 CONFIGURE AND DISPLAY VIEWS

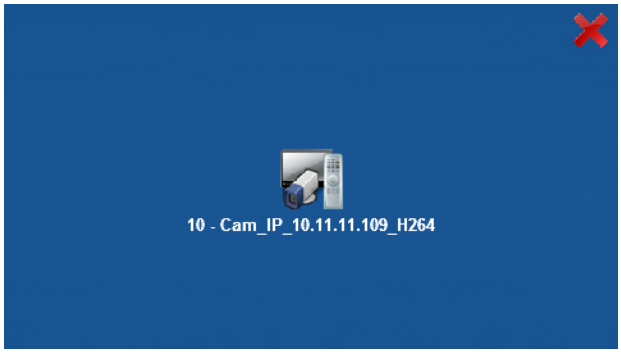
A *View* is an arrangement of panes, each containing channels that can be displayed on the same monitor at the same time. Channels must be assigned to the cameras and streams before being uses in a View.

Views are based on *panes*. A pane is a rectangular area displaying video from a channel. The layout of a View consists of one or more panes in any of the following arrangements on the screen:

- 1x1
- 1x2 horizontal
- 2x1 vertical
- 2x2
- 3x3
- 4x4

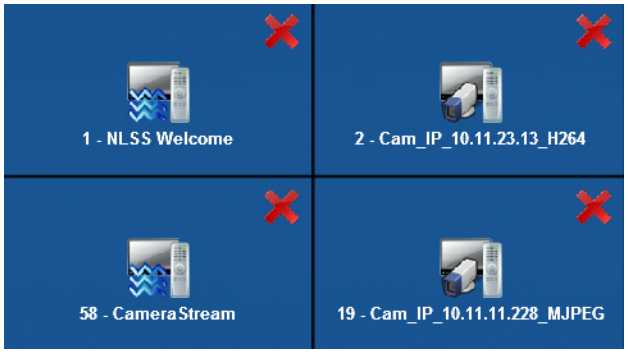
The following examples illustrate some layout configurations:

1x1 (single pane)



1x2 H (two panes arranged horizontally

1x2 V (two panes arranged vertically)



2x2 (4 panes in a 2x2 arrangement)

3.8.1 View Parameters

When a View is selected from the View Menu, the parameters are displayed.

- **View Name:** An unique name for the view.
- **Layout Type:** Select a layout from this drop-down menu. The *Panes* graphic reflects the selection.
- **Panes:** (graphic) In conjunction with the *Available Channels* graphical list, the Panes graphic allows channels to be associated with panes.
- **Available Channels:** (graphic) In conjunction with the *Panes* graphic, the *Available Channels* graphic allows channels to be selected for a Pane:
  - To add a channel to a pane, drag the channel from the *Available Channels* list to the target pane in the *Panes* graphic.
  - To remove a channel from a pane, select the red **X** in a pane, or drag a new channel to the same pane. New channels overwrite old channels.
  - To display information on a channel and the camera or other stream it represents, left-click the channel in the *Available Channels* graphic.

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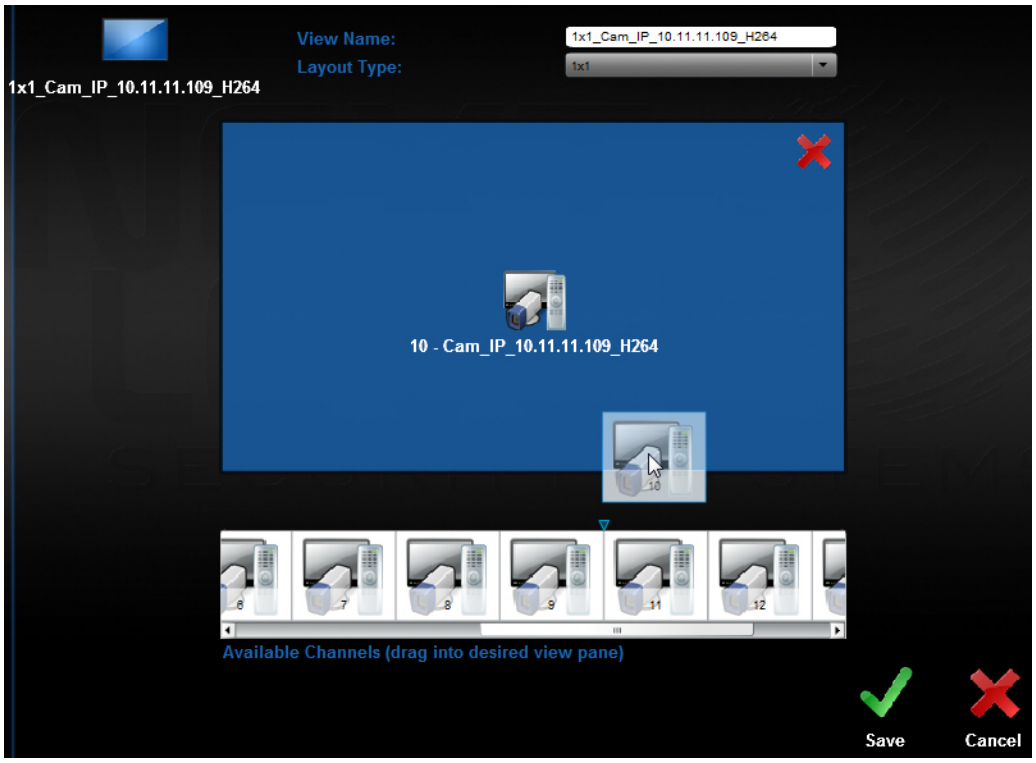
3.8.2 View Actions

- Add a View
- Delete a View
- Display a View on a Monitor
- Display a View on a Monitor

3.8.2.1 Add a View

1. Click **Views** in the Main Menu.
2. Click **+Add** View list.
3. Enter the **View Name** and **Layout Type** in the View Parameters for the new View.
4. Drag an **Available Channel** into a Pane.



5. Click **Save** to record your changes, or **Cancel** to abort.

3.8.2.2 Configure a View

1. Click **Views** in the Main Menu.
2. Select a View.
3. Edit the View Parameters.
4. Select **Save** to record your changes, or **Cancel** to abort.

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3.8.2.3 DELETE A VIEW

1. Click **Views** in the Main Menu.
2. Select a View.
3. Click **—Delete** above the Views list.
4. Click **Yes** in the confirmation pop-up.

3.8.2.4 DISPLAY A VIEW ON A MONITOR

1. Click **Views** in the Main Menu.
2. Select a View.
3. Click **Set Active** to display the View on a monitor attached to the Decoder.

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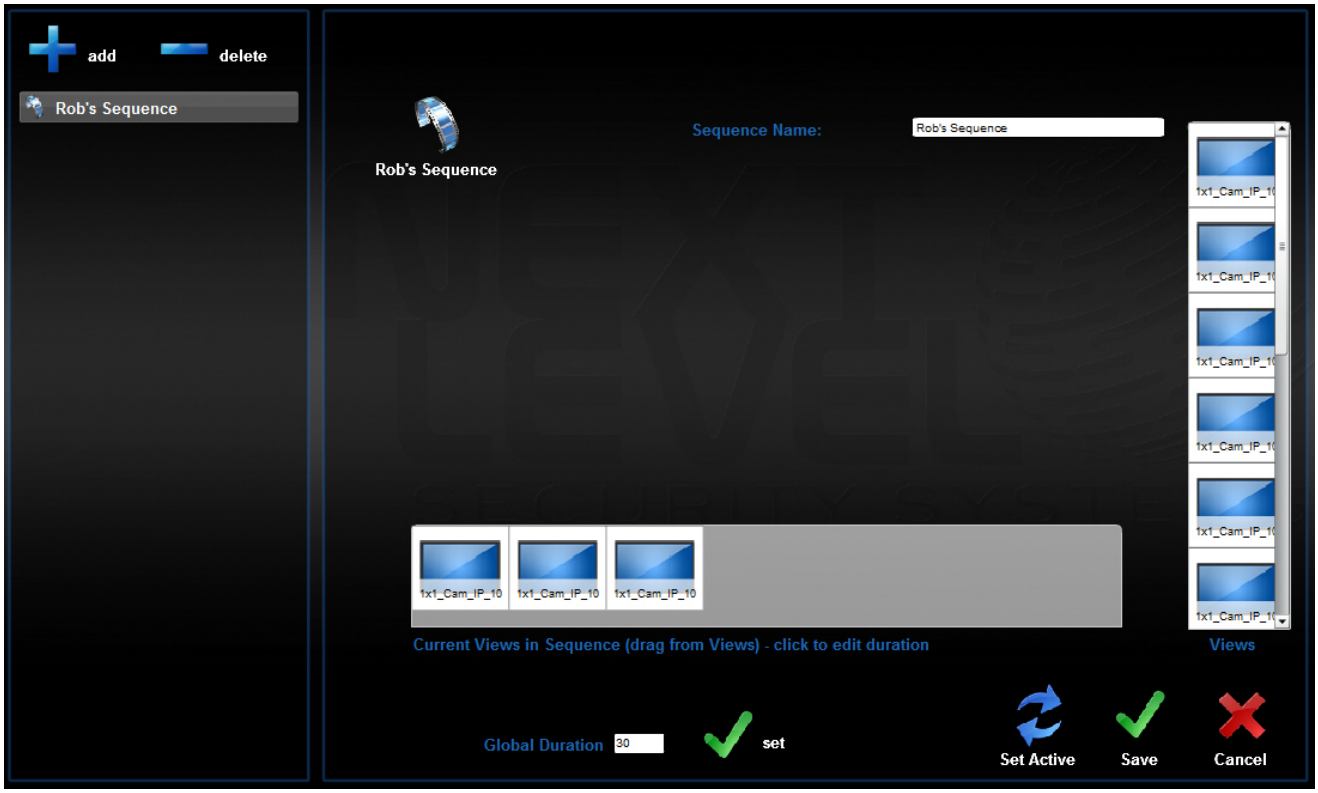
3.9 CONFIGURE AND DISPLAY SEQUENCES

A Sequence consists of two or more views, displayed one after the other in series. Multiple views can be monitored automatically. Only existing views can be used in a Sequence. Similarly, only existing channels can be used in views.

3.9.1 Sequence Parameters

Each Sequence has three editable parameters.



- **Sequence Name:** A unique name that identifies the sequence.
- **Views:** Is a graphical list of existing views that can be added to the sequence.
- **Current Views in Sequence:** A graphical list of views used in this sequence. In conjunction with the *Views* graphical list, the *Current Views in Sequence* allows views to be added, removed, and reordered in the sequence.
  - To add a view to the selected sequence, drag the view from the *Views* graphical list to the *Current Views in Sequence* graphic.
  - To remove a view from the sequence, drag the view out of the *Current Views in Sequence* graphic to any blank area on the screen.
  - To change the order of views in a sequence, either:
    - Drag-and-drop the views into the desired order within the *Current Views in Sequence* list

      – or –

    - Select **Shuffle** to randomize the order.

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  - To display information on a view, left-click the view in the *Current Views in Sequence* list.

- **Global Duration:** Enter a value (in seconds), and click **Set**, to define how long each View is displayed before switching to the next view in the sequence.

  Setting a duration of zero (**0**) seconds allows video clips to run to completion, regardless of their length.

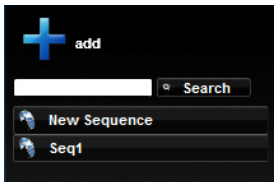
- **Duration (in seconds):** This option appears only when an existing View is selected in the *Current Views in Sequence* graphical list.
  i. Enter a different value (in seconds) than the Global Duration.
  ii. Click **Save** to set a custom duration for displaying the selected View.

3.9.2 Sequence Actions

- **Add a New Sequence**
- **Delete a Sequence**
- **Configure a Sequence**
- **Display a Sequence on a Monitor**

3.9.2.1 Add a New Sequence

1. Click **Sequences** in the Main Menu.
2. Click **+Add**.



3. Configure the **Sequence Parameters**.
4. Click **Save** to record your changes, or **Cancel** to abort.

3.9.2.2 Delete a Sequence

1. Click **Sequences** in the Main Menu.
2. Select a sequence.
3. Click **—Delete**.
4. Click **Yes** in the confirmation pop-up.

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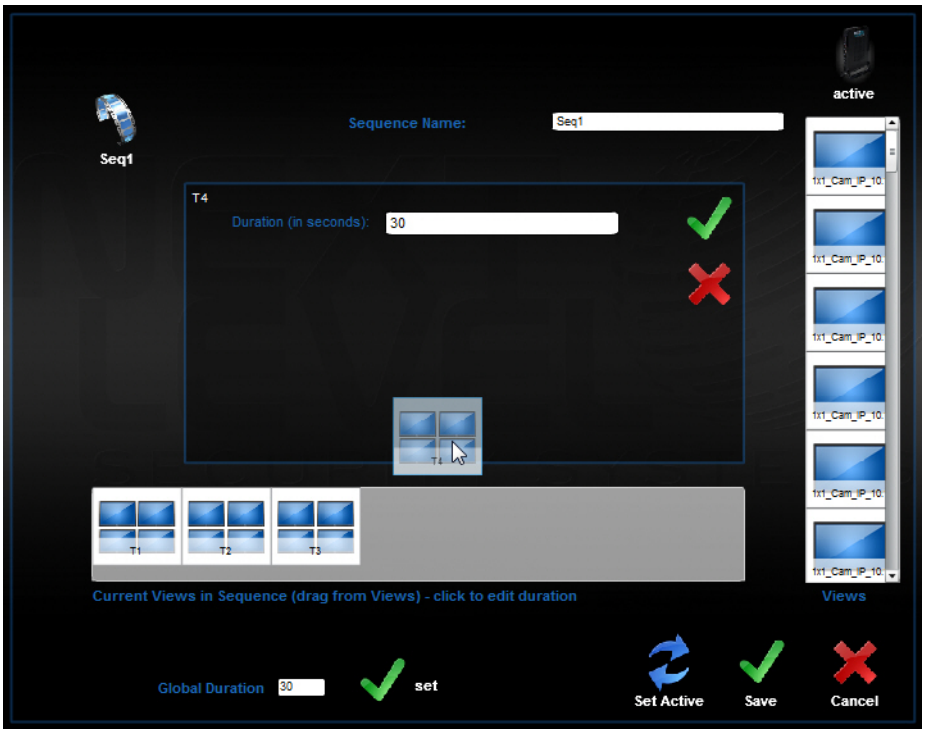
3.9.2.3 CONFIGURE A SEQUENCE

1. Click **Sequences** in the Main Menu.
2. Select a sequence.
3. Edit the **Sequence Parameters**.



4. Click **Save** to record your changes, or **Cancel** to abort.

3.9.2.4 DISPLAY A SEQUENCE ON A MONITOR

1. Click **Sequences** in the Main Menu.
2. Select a sequence.

3. Click **Set Active** to display the sequence on a monitor attached to the Decoder.

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Chapter 4: Operation with Peripheral Controls

After a Decoder is configured from the NLSS Web Interface, it can be operated with supported peripheral devices:

- **Remote Control** (included with the DC-400-2)
- **Axis T8411 Joystick**
- **Keypad**

The joystick and keypad are purchased separately.

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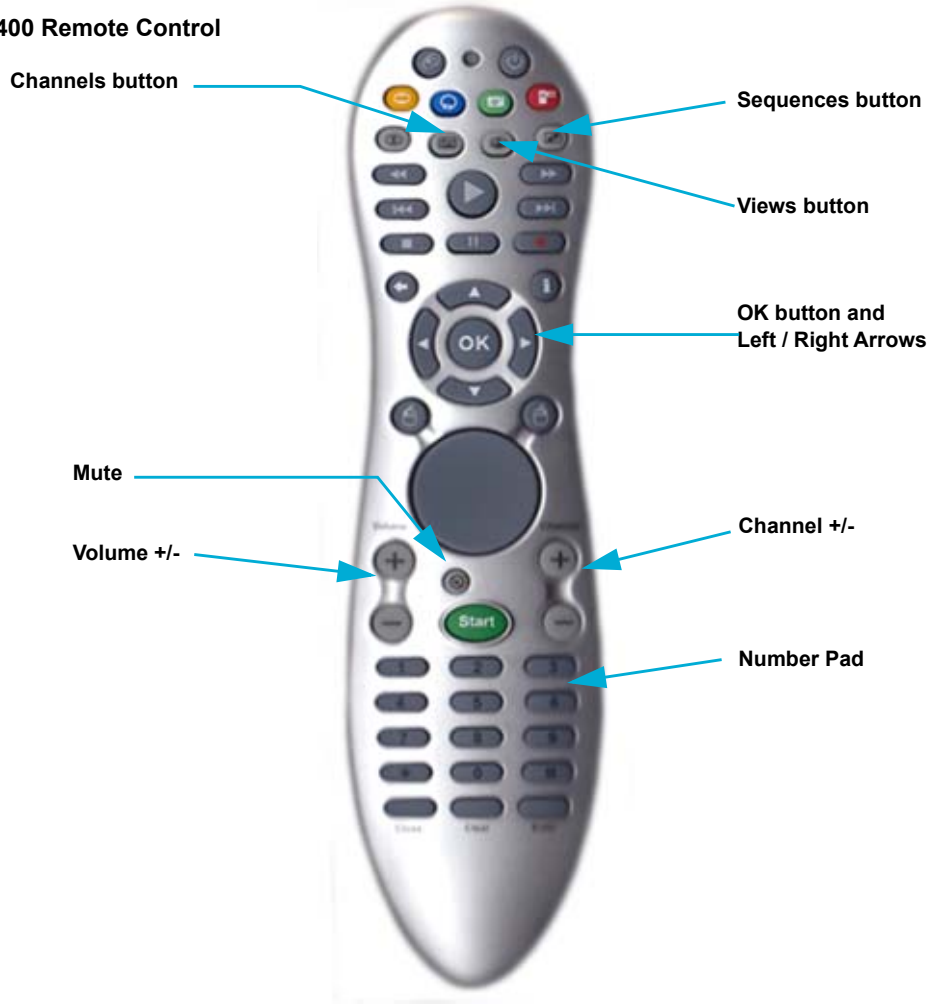
4.1 REMOTE CONTROL

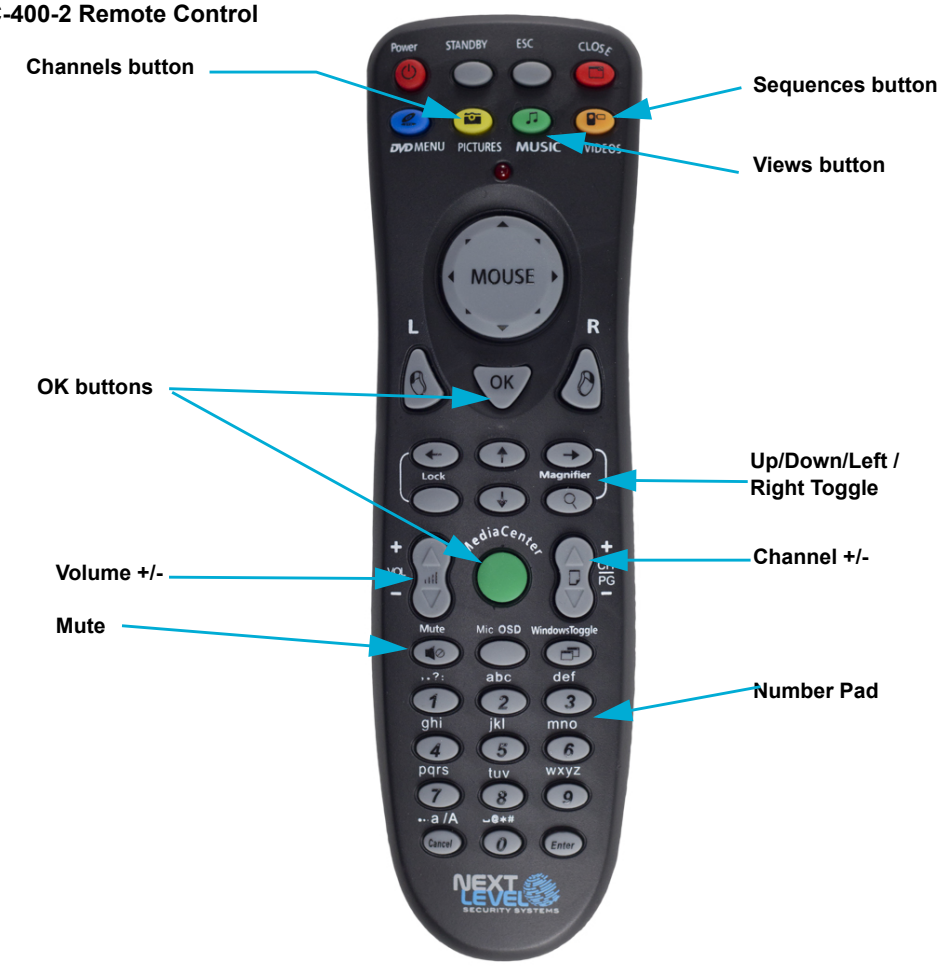
Channels must be configured via the NLSS Web Interface, before they can be displayed with the remote control.

The type of remote control depends on the Decoder model. The remote control was optional with the DC-400, and is included with the DC-400-2.

DC-400 Remote Control



DC-400-2 Remote Control



4.1.1 Display a Channel

Use the remote control to display existing channels on the monitor attached to the Decoder. Three options are available for selecting channels.

- Change channels by using the **Channel +/-** buttons.
- Type a channel number with the **Number Pad**, and press **OK**.
- Press the **Channels** button to display the Channels Menu on an attached monitor. Use the **Left and Right Arrow** buttons to select a channel in the list, and press **OK** button to display the selected channel.
  - Press the **Channels** button again to cancel.

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4.1.2 Display a View

1. Press the **Views** button to display the Views Menu on the attached monitor.
2. Use the **Left/Right Arrow** buttons to select a view in the list.
3. Press **OK** to display the selected View.
   – Press the **Views** button again to cancel.

4.1.3 Display a Sequence

1. Press the **Sequences** button to display a configured sequences.
2. Press the **Sequences** button again to display a different sequence.

To cancel sequences, select any Channel or View from their Menus.

4.1.4 Adjust Audio

- Change volume with the **Volume +/-** buttons.
- Toggle sound on/off with the **Mute** button.

4.2 AXIS T8411 JOYSTICK

The joystick can be used alone, or in conjunction with a **Keypad**, to change channels.

The joystick cannot be used to display Views and Sequences, or to adjust volume. The keypad can handle those functions.

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4.2.1 Attach the Joystick

Plug the Axis T8411 joystick into an open USB slot on the NLSS HD Media Decoder.

4.2.2 Display a Channel

Each channel corresponds to a video stream from a camera.

- Change channels by using the **L** and **R** buttons.

4.2.3 Control a Pan, Tilt Zoom Camera

The joystick can control a live PTZ camera. The joystick cannot control PTZ functions for a stream, even if the source is PTZ capable.

4.2.3.1 Manual Control

- To pan the camera, move the joystick left and right.
- To tilt the camera, move the joystick up and down.
- To zoom the camera, twist the joystick handle.

4.2.3.2 Presets

The J1 - J4 buttons call presets for live cameras. These presets must be configured on the source cameras before the joystick can call them.

1. Follow the instructions provided by the camera's manufacturer to log into the configuration menu of the desired camera.
2. In the camera's configuration menu, set up the first four camera presets according to the manufacturer's instructions.

   Label these presets *exactly* as follows:

   – **PRESET_1**
   – **PRESET_2**
   – **PRESET_3**
   – **PRESET_4**
3. After presets are configured, move the camera to those presets by using the **J1** - **J4** buttons.

   For example, to move the camera to PRESET_1, press the **J1** button.

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4.3 KEYPAD

The keypad can change the channels configured on the NLSS HD Media Decoder.

Only certain keypads are supported by the system, although these keypads all use a standard design. See the NLSS HD Media Decoder Technical Specification for a list of supported keypads.

4.3.1 Attach a Keypad

Plug the keypad into an open USB slot on the NLSS HD Media Decoder.

4.3.2 Display a Channel

Three options are available for accessing a channel from a keypad.

- Change the channels using the **+** and **–** keys.
- Enter a channel number on the Number Pad, and press **Enter**.
- Use the keypad to navigate a menu:
  i. To display a list of Channels, enter **/1Enter**:
     a. Press the slash key (**/**).
     b. Press the number **1**.
     c. Press **Enter**.
  ii. Navigate the channels list using the **Arrow** keys (typically shared by the 2, 4, 6, and 8 keys).
  iii. Highlight a channel, press **Enter**.

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4.3.3 Display a View

1. To display a list of views, type **/2Enter**.
   a. Press the slash key (*/*).
   b. Press the number **2**.
   c. Press **Enter**.
2. Use the **Arrow** keys to navigate the views list.
3. Highlight a view, press **Enter**.

4.3.4 Display a Sequence

1. To display a list of sequences, type **/3Enter**.
   a. Press the slash key (*/*).
   b. Press the number **3**.
   c. Press **Enter**.
2. Use the **Arrow** keys to navigate the sequences list.
3. Highlight a sequence, and press **Enter**.

4.3.5 Display the Active View

The *Active View* is the view last *Set Active* on the Decoder using the NLSS Web Interface.

Even if the display is changed with a remote control, joystick, or keypad, channels, or sequences, the Active View remains the same in the Decoder's memory.

- Type **/4Enter** on the keypad:
  a. Press the slash key (*/*).
  b. Press the number **4**.
  c. Press **Enter** key.

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Appendix A: Supported Camera Vendors

The NLSS HD Media Decoder supports some or all of the IP cameras from the manufacturers listed below.

This list includes the default user names, passwords, and RTSP syntax that each manufacturer typically uses for its IP cameras.

For exceptions and updates, refer to the documentation provided by the manufacturers of your cameras.

Manufacturer	Default User	Default Password	Example RTSP Syntax
Arecont Vision	admin	blank	rtsp://10.11.23.50:554/h264.sdp?res=half&x0=0&y0=0&x1=1920&y1=1200&qp=20&doublescan=0&bitrate=65535&ssn=20
Axis	root	Must be set	rtsp://10.11.22.103:554/mpeg4/media.amp rtsp://10.11.20.138:554/axis-media/media.amp
IQInvision	root	system	rtsp://10.11.22.110:554/PSIA/Streaming/channels/0
Panasonic	admin	12345	rtsp://10.11.20.112:554/MediaInput/mpeg4
Pelco	admin	blank	rtsp://10.11.23.114:554/stream1
Sony	admin	admin	rtsp://10.11.11.224:554/media/video1

For a list of individual camera models that NLSS supports, see the NLSS web site: **www.nlss.com**.

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